

### **Abstract**

The invention relates to a method that can be carried out in parallel and automated for the production of any nucleic acid, comprising the following steps:

- a) coupling an oligonucleotide to a solid matrix
- b) adding an additional oligonucleotide
- c) ligating the oligonucleotides from steps a) and b) in one orientation
- d) removing excess reactants and enzymes from the reaction preparation
- e) cleaving the ligation product from step c) with a restriction enzyme that cleaves outside the recognition sequence, whereby cleavage occurs in the oligonucleotide from step a) or in the oligonucleotide from step b)
- f) separating the reaction mixture from the lengthened or shortened oligonucleotide from step a) that is obtained in step e)
- g) repeating steps b) to f) at least once
- h) successive sequence-independent linkage of the fragments obtained after performing steps a) to g) until the desired product is obtained.

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